

## Section I. (Amendments to Specification)

1. On page 8, please add the following new paragraphs before the paragraph starting at line 3:

For example, the high dielectric constant material comprises amorphous metal oxide thin film materials of a composition that is ferroelectric in both crystalline thin film and crystalline bulk forms, or amorphous metal oxide thin film materials that are compositionally related to such ferroelectric compositions, but which are "away from" the ferroelectric materials, i.e., off-stoichiometric in relation thereto. Specifically, such thin film amorphous dielectric materials have a voltage independent capacitance, a capacitance density in the range of from about 1000 to about 10000 nF/cm<sup>2</sup>, and a current leakage of <10<sup>-7</sup> A/cm<sup>2</sup>.

The thin film materials of the invention may be of a widely varied type, including compositions that are highly ferroelectric or anti-ferroelectric in their bulk crystalline forms. Highly A-site (ABO<sub>3</sub>) deficient materials may be employed for such purpose. More specifically, PbO or Bi<sub>2</sub>O<sub>3</sub> additions to oxides of titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum, tungsten, etc., may be utilized to yield high k amorphous films. Particularly preferred high k amorphous film materials include barium titanate, strontium titanate, barium strontium titanate, strontium bismuth tantalate, bismuth titanate, lead zirconium titanate, and the like. Alloying of the amorphous film materials with La, Nb, Zr, Hf, W, and Ba may be employed to produce high k amorphous films.

In one specific preferred embodiment of the invention, the amorphously frustrated ferroelectric material comprises a bismuth oxide material (e.g., SrBi<sub>2</sub>Ta<sub>2</sub>O<sub>9</sub>, Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub>, etc.), as grown by MOCVD to produce films that are substantially completely amorphous by x-ray diffraction (XRD) characterization.

In another specific preferred embodiment of the invention, the amorphously frustrated ferroelectric material comprises a (Ba,Sr)TiO<sub>3</sub> (BST) material, as grown by MOCVD to produce films that are substantially completely amorphous by x-ray diffraction (XRD) characterization.

The amorphous paraelectric films of the invention may be formed in any suitable manner, wherein the oxide film is deposited and subsequently processed at a temperature below about 500°C, and more preferably below about 400°C. Among possible deposition techniques are physical vapor deposition, sputtering, solution deposition, and assisted (plasma, x-ray, e-beam, etc.) and unassisted chemical vapor deposition.

The preferred deposition process is liquid delivery metalorganic chemical vapor deposition (liquid delivery MOCVD).

2. On page 20, please replace the paragraph beginning at line 13 with the following paragraph:

Capacitor 60 comprises a high dielectric constant layer 62, which may include a complex metal oxide such as SBT, BST, BT, PZT, or a combination thereof. Two IrO<sub>2</sub> layers 64 and 66 are in direct contact with the high  $k$  layer 62 on both respective sides thereof, and two Ir<sub>2</sub>O<sub>3</sub> layers 68 and 70 overlie the IrO<sub>2</sub> layers. Two Ir layers 72 and 74 overlie the respective Ir<sub>2</sub>O<sub>3</sub> layers and directly contact the respective outer Cu or Al electrodes ~~70~~ 76 and 78.